

AMENDMENTS TO THE CLAIMS

Please amend claims 1-2, 5-6, 8, 13, and 15 as indicated below, wherein deleted material is shown by strikethrough (or double brackets) and added material is underlined. A complete listing of claims pending in the application following entry of this Amendment are presented as follows:

1. (Currently Amended) A testing apparatus for a game ball, the testing apparatus comprising:
 - a support having a leading edge and a trailing edge, the support being tapered between the leading edge and the trailing edge, and the support having a longitudinal axis that extends through a first end and a second end of the support;
 - a mount located proximal the first end of the support and configured to secure to the game ball, the mount being rotatable about the longitudinal axis; and
 - a motor that rotates the mount; and
 - a sensor that detects forces upon the game ball in a first direction and a second direction when the motor rotates the mount, the first direction corresponding with a direction between the leading edge and the trailing edge, and the second direction being orthogonal to both the first direction and the longitudinal axis.
2. (Currently Amended) The testing apparatus recited in claim 1, wherein the support has ~~[[a]]~~ an airfoil configuration between the leading edge and the trailing edge.
3. (Original) The testing apparatus recited in claim 1, wherein the support is tapered between the first end and the second end.
4. (Original) The testing apparatus recited in claim 1, wherein the support has a constant width in the second direction.
5. (Currently Amended) The testing apparatus recited in claim 1, wherein the support includes a rotating element that extends along substantially all of the longitudinal axis and is coupled to the mount and the motor.

6. (Currently Amended) The testing apparatus recited in claim 5, wherein the mount is secured to the rotating element and rotates with the rotating element.
7. (Original) The testing apparatus recited in claim 5, wherein a tachometer is operatively connected to the rotating element and detects an angular velocity of the rotating element.
8. (Currently Amended) The testing apparatus recited in claim 5, wherein ~~the testing apparatus further includes~~ [[a]] the motor ~~that~~ is operatively connected to the rotating element through a gear reducer.
9. (Original) The testing apparatus recited in claim 1, wherein the mount has a concave surface with a curvature that is substantially similar to a curvature of the game ball.
10. (Original) A testing apparatus for a game ball, the testing apparatus comprising:
 - a rotating element with a first end, a second end, and a longitudinal axis that extends through the first end and the second end, the rotating element being rotatable about the longitudinal axis;
 - a mount located proximal the first end of the rotating element and configured to secure to the game ball, the mount being rotatable with the rotating element about the longitudinal axis;
 - an airfoil extending around the rotating element, the airfoil having a leading edge and a trailing edge; and
 - a sensor that detects forces upon the game ball in a first direction and a second direction, the first direction corresponding with a direction between the leading edge and the trailing edge, and the second direction being orthogonal to both the first direction and the longitudinal axis.
11. (Original) The testing apparatus recited in claim 10, wherein the airfoil has a leading edge and the trailing edge, the airfoil being tapered between the leading edge and the trailing edge.

12. (Currently Amended) The testing apparatus recited in claim 11, wherein the ~~support~~ airfoil is tapered in an area that is between the first end and the second end of the rotating element.

13. (Currently Amended) The testing apparatus recited in claim 10, wherein the ~~support~~ airfoil has a constant width in the second direction.

14. (Original) The testing apparatus recited in claim 10, wherein the mount is secured to the first end of the rotating element.

15. (Currently Amended) The testing apparatus recited in claim 10, wherein a tachometer is operatively connected to the rotating element and detects ~~[[a]]~~ an angular velocity of the rotating element.

16. (Original) The testing apparatus recited in claim 10, wherein the testing apparatus further includes a motor that is operatively connected to the rotating element through a gear reducer.

17. (Original) The testing apparatus recited in claim 10, wherein the mount has a concave surface with a curvature that is substantially similar to a curvature of the game ball.

18. (Original) A method of determining fluid properties of a game ball, the method comprising steps of:

rotating the game ball about an axis;

inducing fluid flow around the game ball and in a first direction that is orthogonal to the axis; and

sensing forces upon the game ball in the first direction and a second direction, the second direction being orthogonal to both the first direction and the axis.

19. (Original) The method recited in claim 18, wherein the step of inducing fluid flow includes placing the game ball in a wind tunnel.

20. (Original) The method recited in claim 18, further including a step of securing the game ball to a testing apparatus.

21. (Original) The method recited in claim 20, further including a step of selecting the testing apparatus to have:

a rotating element with a first end, a second end, and a longitudinal axis that extends through the first end and the second end, the rotating element being rotatable about the longitudinal axis;

a mount located proximal the first end of the rotating element and configured to secure to the game ball, the mount being rotatable with the rotating element about the longitudinal axis;

an airfoil extending around the rotating element, the airfoil having a leading edge and a trailing edge; and

a sensor that detects the forces.

22. (Original) The method recited in claim 21, wherein the step of inducing fluid flow includes placing the game ball and the testing apparatus in a wind tunnel.

23. (Original) The method recited in claim 18, further including steps of:

rotating a different game ball about an axis;

inducing fluid flow around the different game ball; and

sensing forces upon the different game ball.

24. (Original) The method recited in claim 23, further including a step of analyzing data relating to the forces upon the game ball and the forces upon the different game ball.

25. (Original) The method recited in claim 24, further including a step of incorporating characteristics from at least one of the game ball and the different game ball into a commercially-available game ball based upon the data.

26-33. (Cancelled)

34. (New) A testing apparatus for a game ball, the testing apparatus comprising:

- a rotating element with a first end, a second end, and a longitudinal axis that extends through the first end and the second end, the rotating element being rotatable about the longitudinal axis;
- a mount located proximal the first end of the rotating element and configured to secure to the game ball, the mount being rotatable with the rotating element about the longitudinal axis;
- a support extending around the rotating element, the support having a rounded leading edge and a tapered trailing edge that define a teardrop shape in the support; and
- a sensor that detects forces upon the game ball in a first direction and a second direction, the first direction corresponding with a direction between the leading edge and the trailing edge, and the second direction being orthogonal to both the first direction and the longitudinal axis.

35. (New) The testing apparatus recited in claim 34, wherein the mount is secured to the first end of the rotating element.

36. (New) The testing apparatus recited in claim 34, wherein a tachometer is operatively connected to the rotating element and detects an angular velocity of the rotating element.

37. (New) The testing apparatus recited in claim 34, wherein the testing apparatus further includes a motor that is operatively connected to the rotating element.

38. (New) The testing apparatus recited in claim 34, wherein the mount has a concave surface with a curvature that is substantially similar to a curvature of the game ball.